ASSIGNMENT 2

Textbook Assignment: "Planning Plumbing Projects" and "Fire Protection Systems." Pages 7-20 through 8-27.

- 2-1. Direct chemical attack over the surface of a metal is known by what term?
 - 1. Galvanic action
 - 2. Uniform corrosion
 - 3. Dezincification
 - 4. Embrittlement
- 2-2. A difference of potential between areas on a metallic surface in contact with an electrolyte causes what condition?
 - 1. Compositional corrosion
 - 2. Direct chemical attack
 - 3. Local galvanic action
 - 4. Uniform corrosion
- 2-3. Corrosion of underground pipelines, resulting from unlike soils and subsurface stray currents, is characterized by what type of deterioration?
 - 1. Localized
 - 2. Uniform
 - 3. Nonelectrolytic
 - 4. Synthetic
- 2-4. In underground pipelines, the mill scale embedded in the wall of iron pipe causes what type of corrosion?
 - 1. Uniform
 - 2. Localized
 - 3. Compositional
 - 4. Biological
- 2-5. Which of the following types of pipe is most susceptible to microbiological corrosive action?
 - 1. Monel
 - 2. Plastic
 - 3. Steel
 - 4. Asbestos
- 2-6. Dezincification, graphitization, and hydrogen embrittlement are what specific type of corrosion?
 - 1. Localized
 - 2. Compositional
 - 3. Uniform
 - 4. Biological

- 2-7. Sections of buried pipelines under stress are subject to localized electrolytic corrosion when adjoining unstressed sections become
 - 1. cathodic
 - 2. localized
 - 3. anodic
 - 4. sacrificial
- 2-8. Nonelectrolytic gases and vapors cause corrosion only when subjected to what condition?
 - 1. Low temperatures
 - 2. Negative potentials
 - 3. High temperatures
 - 4. Positive potentials
- 2-9. Internal deterioration is most likely to occur in metal piping and storage facilities containing impure nonelectrolytic fluids.
 - 1. True
 - 2. False
- 2-10. Rainwater is generally considered an electrolyte because it contains
 - 1. dissolved atmospheric gases
 - 2. suspended solids
 - 3. minerals in solution
 - 4. measurable resistivity
- 2-11. Which of the following corrosive reactions is often the result of an agent, such as salt, being present in the environment?
 - 1. Hydrogen embrittlement
 - 2. Localized galvanic action
 - 3. Stray current electrolysis
 - 4. Direct chemical attack
- 2-12. When you find it necessary to join copper and galvanized piping, the fitting should be equipped with which of the following materials?
 - 1. An anode
 - 2. A fiber-glass wrap
 - 3. A dielectric bushing
 - 4. A standard cross-connection

- 2-13. Which of the following coatings is best suited for use as a corrosion inhibitor on exposed steel pipelines suspended along piers?
 - 1. Coal tar
 - 2. Grease
 - 3. Concrete
 - 4. Asphalt
- 2-14. In the galvanic anode method of cathodic protection for steel structures, the structure is established as the cathode in a dissimilar metal galvanic cell by the use of what electrically connected component?
 - 1. Copper anode
 - 2. Sacrificial anode
 - 3. Magnesium cathode
 - 4. Controlled resistor
- 2-15. The impressed current method of cathodic protection is different from the galvanic anode method in which of the following ways?
 - 1. An electrical source is not required
 - A direct current is applied from anode to cathode
 - 3. An anode is unnecessary
 - 4. A cathode may be used for the anode

TEST EQUIPMENT

- A. Holiday Leak Detector
- B. Resistivity Meter
- C. Volt-Millivolt Meter
- D. Ohmmeter

Figure 2A

IN ANSWERING QUESTIONS 2-16 THROUGH 2-20, REFER TO FIGURE 2A.

- 2-16. Locate imperfections in pipe coatings:
 - 1. A
 - 2. В
 - 3. C
 - 4. D

- 2-17. Measure the structure-to-soil potential of a given cathodic protection system:
 - 1. D
 - 2. C
 - 3. B
 - 4. A
 - 2-18. Locate an area suitable for an anode bed:
 - 1. A
 - 2. B
 - 3. C
 - 4. D
 - 2-19. Measure the corrosive susceptibility of a given soil:
 - 1. D
 - 2. C
 - 3. B
 - 4. A
 - 2-20. Determine the variation in potential of galvanic anodes:
 - 1. A
 - 2. B
 - 3. C
 - 4. D
 - 2-21. All automatic sprinkler systems have which of the following characteristics in common?
 - 1. Water supply
 - 2. Piping network
 - 3. Sprinklers
 - 4. Each of the above
 - 2-22. What type of automatic sprinkler system is most commonly used?
 - 1. Wet pipe
 - 2. Semidry pipe
 - 3. Low-differential dry pipe
 - 4. Latched-clapper dry pipe
 - 2-23. In a dry-pipe system, the pipes can contain air or what other element under pressure?
 - 1. Argon
 - 2. Nitrogen
 - 3. Hydrogen
 - 4. Xenon

- 2-24. In a differential dry-pipe valve system, the air must be maintained at least how many psi greater than the trip pressure?
 - 1. 5
 - 2. 10
 - 3. 15
 - 4. 20
- 2-25. When debris in the water is a problem, you should use what type of dry-pipe valve?
 - 1. Low differential
 - 2. High differential
 - 3. Mechanical
 - 4. Latched clapper
- 2-26. What type of automatic sprinkler system should you use in an aircraft hangar?
 - 1. Wet pipe
 - 2. Semidry pipe
 - 3. Water-deluge
 - 4. Semiwet pipe
- 2-27. Preprime plugs blow out of the sprinklers at approximately what water pressure?
 - 1. 10 psi
 - 2. 15 psi
 - 3. 20 psi
 - 4. 25 psi
- 2-28. Automatic sprinklers have orifices graduated in what size increments?
 - 1. 1/16 inch
 - 2. 1/8 inch
 - 3. 1/4 inch
 - 4. 1/2 inch
- 2-29. A fusible-link sprinkler is kept closed by a twopiece link fused together by what type of metal?
 - 1. Copper
 - 2. Aluminum
 - 3. Solder
 - 4. Steel
- 2-30. A dry-pendent sprinkler is used when the system is exposed to which of the following conditions?
 - 1. High ambient temperatures
 - 2. Freezing temperatures
 - 3. Explosive elements
 - 4. Unstable chemicals

- 2-31. A dry-pipe alarm system has which of the following characteristics?
 - 1. It is slow acting
 - 2. It is moderate acting only
 - 3. It is fast acting only
 - 4. It is moderate or fast acting
- 2-32. The retard switch connected to the alarm port of a wet sprinkler system alarm-check valve is normally set within what pressure range?
 - 1. 10 to 20 psi
 - 2. 8 to 15 psi
 - 3. 6 to 15 psi
 - 4. 4 t0 15 psi
- 2-33. A pressure pump/pressure drop type of waterflow detector is usually adjusted to maintain what system pressure above normal supply pressure?
 - 1. 20 to 40 psi
 - 2. 25 to 50 psi
 - 3. 30 to 60 psi
 - 4. 35 to 70 psi
- 2-34. In an electronic pressure-drop detector, an overpressure condition of what magnitude can cause a trouble signal?
 - 1. 100 psi
 - 2. 150 psi
 - 3. 200 psi
 - 4. 250 psi
- 2-35. To prevent freezing of water in a fire protection system, a Utilitiesman normally installs a supervisory device in a pipe or reservoir with what low water-temperature setting?
 - 1. 0° F
 - 2. 25° F
 - 3. 32° F
 - 4. 40° F

2-41. General condition of hydrants: INSPECTION AND TEST PERIODS 1. B A. Weekly 2. C 3. D B. Monthly 4. E C. Quarterly 2-42. Water level in tanks: D. Annually 1. A 2. В E. Every 3 years 3. C 4. D Figure 2B 2-43. Valves (to see if they are in the open position): IN ANSWERING QUESTIONS 2-36 THROUGH 2-43, 1. D 2. C REFER TO FIGURE 2B. 3. B 2-36. General condition of sprinkler heads and 4. A sprinkler systems: 2-44. What minimum distance must be maintained beneath a sprinkler for proper water 1. B distribution? 2. C 3. D 4. E 1. 48 inches 2. 36 inches 2-37. Water-flow alarms: 3. 24 inches 4. 18 inches 1. A 2. B 2-45. What type of test should be performed quarterly to test the alarm-check valves? 3. C 4. D 6-inch drain test 2-inch drain test 2.. 2-38. Air and water pressure in dry-pipe systems: 3. 8-inch drain test 4-inch drain test 1. D 2. C 3. B 2-46. In a dry-pipe sprinkler system, the entire system should be checked for tightness when 4. A air pressure losses exceed what value? 2-39. High-speed suppression systems: 5 psi 1. 2. 10 psi 1. B 15 psi 2. C 3. D 20 psi 4. E 2-47. When testing a water-clapper valve designed 2-40. General condition of standpipe systems: to trip at a fixed pressure of 10 to 15 psi, you should maintain what minimum air pressure on 1. D this valve? 2. C 1. 15 psi 3. B 2. 30 psi 4. A 3. 45 psi

4. 60 psi

- 2-48. When performing a basic inspection of accelerators and exhausters, you should check what pressure?
 - 1. Water
 - 2. Air
 - 3. Centrifugal
 - 4. Atmospheric
- 2-49. When testing a dry-pipe valve, you should perform what action first?
 - 1. Close the main control valve
 - 2. Open the main control valve
 - 3. Open the inspector test connection
 - 4. Close the inspector test connection
- 2-50. Once the dry-pipe system has been tested and the dry-pipe valve reset, you should check the air pressure within what approximate time period?
 - 1. 12 to 24 hours
 - 2. 2 to 4 hours
 - 3. 24 to 48 hours
 - 4. 4 to 8 hours
- 2-51. When testing deluge and preaction valves, you should perform the 2-inch drain test at what time interval?
 - 1. Weekly
 - 2. Monthly
 - 3. Quarterly
 - 4. Annually
- 2-52. When performing a deluge valve dry trip-test in a flammable area, you should use what test in place of the electric test set?
 - 1. Infrared light
 - 2. Hot water only
 - 3. Hot cloth only
 - 4. Hot water or hot cloth
- 2-53. When performing the cathodic protection test with an ammeter, you notice a diminishing current flow. This is an indication of what type of problem?
 - 1. Failing electrodes
 - 2. Blown fuses
 - 3. Frozen electrodes
 - 4. Broken ground wires

- 2-54. Under normal circumstances, full operational testing of high-speed suppression systems should be conducted at intervals not to exceed how many years?
 - 1. 1
 - 2. 5
 - 3. 3
 - 4. 7
- 2-55. Gaseous extinguishing systems are normally located in which of the following areas?
 - 1. Computer operation centers
 - 2. Radio receiver buildings
 - 3. Power generating facilities
 - 4. Each of the above
- 2-56. A local application system would normally be found in which of the following locations?
 - 1. Paint dip tank
 - 2. Restaurant range hood
 - 3. Special motor
 - 4. Each of the above
- 2-57. What type of system, if any, should you install in a transformer vault that contains oil-filled equipment?
 - 1. Local application
 - 2. Total flooding
 - 3. Hose line
 - 4. None
- 2-58. What characteristic of carbon dioxide makes it desirable for use on electrical fires?
 - 1. High-pressure application
 - 2. Electrical conductivity
 - 3. Electrical nonconductivity
 - 4. Low-pressure application
- 2-59. What is the normal cylinder pressure in a highpressure system?
 - 1. 600 psi
 - 2. 500 psi
 - 3. 400 psi
 - 4. 300 psi

- 2-60. Storage area ambient temperatures for carbon dioxide cylinders should be within what temperature range?
 - 1. 0°F to 100°F
 - 2. 32°F to 130°F
 - 3. 40°F to 150°F
 - 4. 50° F to 100°F
- 2-61. In a low-pressure system, the frangible disk is designed to burst at what pressure?
 - 1. 200 psi
 - 2. 400 psi
 - 3. 600 psi
 - 4. 800 psi
- 2-62. In a low-pressure system, liquid carbon dioxide should always be maintained at what constant (a) pressure and (b) temperature?
 - 1. (a) 200 psi (b) 0°F
 - 2. (a) 300 psi (b) 32°F
 - 3. (a) 200 psi {b) 32°F
 - 4. (a) 300 psi (b) 0°F
- 2-63. High-pressure systems require approximately how many pounds of equipment for every pound of carbon dioxide stored?
 - 1. 1
 - 2. 5
 - 3. 3
 - 4. 7

- 2-64. Pipe and fittings in a high-pressure system have what minimum bursting pressure?
 - 1. 2,000 psi
 - 2. 3,000 psi
 - 3. 5,000 psi
 - 4. 7,000 psi
- 2-65. Pipe and fittings in a low-pressure system have a minimum bursting pressure of how many psi?
 - 1. 1,800
 - 2. 2,000
 - 3. 2,800
 - 4. 3,000
- 2-66. Pressure-relief devices operate at what pressure on a low-pressure system?
 - 1. 400 psi
 - 2. 450 psi
 - 3. 500 psi
 - 4. 550 psi
- 2-67. What automatic device should be installed along with a total flooding system to conserve carbon dioxide?
 - 1. Closing
 - 2. Venting
 - 3. Door closure
 - 4. Electrical lockout